

BMP #114 - Stabilization of Construction Entrance and Roads

DESCRIPTION

A temporary sediment removal device--normally a pad of crushed rock or stone--can be installed at the approach from a construction site to a public roadway, to stabilize the road. This BMP is used to limit sediment tracking from vehicles and equipment leaving the construction site onto public rights-of-way and streets.

APPLICATIONS

A stabilized construction entrance (SCE) is appropriate in the following locations:

- Wherever vehicles are entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk or parking area.
- At any unpaved entrance/exit location where there is risk of transporting mud or sediment onto paved roads.

LIMITATIONS

This control measure is not necessarily needed for temporary roads within the construction site (see BMP #115-Erosion Prevention on Temporary Roads).

DESIGN PARAMETERS

Width: The width should be at least 10 ft (3 meters) but not less than the full width of points where ingress or egress occurs. At sites where traffic volume is high, the entrance should be wide enough for two vehicles to pass safely. Flare the entrance where it meets the existing road to provide a turning radius.






Length: The minimum length should be 50 ft (15 meters) except on a single residence lot where a 30 ft minimum would apply.

Depth: Total depth of rock should be at least 6 inches (385 mm).

Aggregate: Fractured stone 2 to 8 in (50 to 200 mm) in diameter (for the base layer) and crushed stone 2 in (50 mm) in diameter or, reclaimed or recycled concrete equivalent.

Geotextile (filter fabric): Most installations will include geotextile (filter fabric) with the properties listed in the table below, to be placed over the entire area to be covered with aggregate. Work on single residential lots will generally not need

Targeted Pollutants

-  Sediment
-  Phosphorus
-  Trace metals
-  Bacteria
-  Petroleum hydrocarbons

Physical Limits

Drainage area unlimited

Max slope 15 %

Min bedrock depth 3 feet

Min water table NA

SCS soil type ABCD

Freeze/Thaw good

Drainage/Flood control no

geotextile unless there's potential for excessive erosion, a high water table or other risk factor.

Stabilization of Construction Entrance/Roads/Driveways

The geotextile shall be a woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The geotextile shall be inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the properties of the following table:

Geotextile Properties	Light Duty ¹ Roads Grade Subgrade	Heavy Duty ² Haul Roads Rough Graded	Test Method
Grab Tensile Strength (lbs)	200	220	ASTM D1682
Elongation at Failure (%)	50	60	ASTM D1682
Mullen Brust Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 modified
Equivalent Opening Size	40-80	40-80	US Std Sieve CW- 02215
Aggregate Depth (in)	6	10	--

¹Light Duty Road: Are sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

²Heavy Duty Road: Are sites with only rough grading, and where most travel would be multi-axle vehicles. Trevira Spunbond 1135, Mirafi 600X, or equivalent.

³Geotextiles not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

Drainage: Runoff from a stabilized construction entrance should drain to a sediment trap or a sediment basin. Piping of surface water under the entrance shall be provided as needed. If piping is impossible, install a mountable berm with 5:1 slopes.

Dust Control: Dust control should be provided at all times (see BMP #116-Dust Control).

CONSTRUCTION GUIDELINES

- Clear all vegetation, roots, and all other obstructions in preparation for grading.
- Prior to placing geotextile (filter fabric), make sure that the entrance is properly graded and compacted.
- To reduce maintenance and loss of aggregate, place geotextile over the existing ground before placing the stone for the entrance.
- Place a 1 ft (300 mm) layer of fractured stone over the entire width and length of the entrance.
- Place a 4 in layer of 2 in (100 mm layer of 50 mm) crushed stone over the base layer.

MAINTENANCE

The entrance must be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with additional 2 in (50mm) stone (as conditions demand) and repair or clean-out of any structures used to trap sediment.

All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. When necessary, vehicle wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate which drains into an approved sediment trap.

Trapped sediment shall be removed from the site or stabilized on site and prevented from entering storm drains, ditches or watercourses. Disturbed soil areas resulting from removal shall be permanently stabilized.

The stabilized construction entrance may be removed after final site stabilization is achieved or after the temporary BMPs are no longer needed.